

**Louisiana Department of Environmental Quality (LDEQ)
Office of Environmental Services**

STATEMENT OF BASIS

**Vinyl II Plant
Dow Chemical Co - Louisiana Operations
Plaquemine, Iberville/West Baton Rouge Parish, Louisiana,
Agency Interest Number: 1409
Activity Number: PER20040070
Proposed Permit Number: 2665-V7**

I. APPLICANT

Company:

Dow Chemical Co
Dow Chemical Co - Louisiana Operations
PO Box 150
Plaquemine, Louisiana 70765-0150

Facility:

Vinyl II Plant
Dow Chemical Co - Louisiana Operations
21255 Hwy 1
Plaquemine, Iberville/West Baton Rouge Parish, Louisiana,
Approximate UTM coordinates are 668.6 kilometers East and 3355.3 kilometers
North, Zone 15

II. FACILITY AND CURRENT PERMIT STATUS

Dow Chemical Company operates the Vinyl II Plant in the Louisiana Operations complex. Vinyl II Plant operates Title V permit 2665-V6 issued on April 2, 2004.

Dow Chemical Co - Louisiana Operations is a designated Part 70 source. Several Part 70 permits have been issued to the operating units within the Dow Chemical Plaquemine facilities. These include:

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Permit #	Units or Sources	Date Issued
2007-V2	Glycol I Plant	12/13/2006
2008-V3	Polyethylene A Plant	04/17/2007
2024-V3	Light Hydrocarbons III Plant	09/13/2006
2025-V1	Vector SBC Plant	05/12/2003
2048-V0	Polyethylene C Plant	03/01/2002
2179-V4	Polyethylene B Plant	08/08/2005
2188-V0	Solvents/EDC I Plant	01/30/2004
2200-V1	Chlorinated Polyethylene Plant	12/01/2004
2227-V3	Cellulose Plant	01/13/2004
2267-V2	Power & Utilities Plant	08/28/2006
2285-V3	Vinyl II Plant THROX Boilers	01/25/2007
2573-V3	Chlorine Cell Service Plants	08/22/2003
2665-V6	Vinyl II Plant	04/02/2004
2037-V0	Chlorinated Methanes Plant (CMP)	03/10/2005
2203-V1	Glycol II Plant	06/20/2005
2255-V0	Light Hydrocarbons II Plant	01/10/2006
2235-V0	Railroad Tank Car Cleaning Facility	01/18/2006
2190-V0	Environmental Operations Plant	05/31/2006

III. PROPOSED PROJECT/PERMIT INFORMATION

Application

A permit application and Emission Inventory Questionnaire were submitted by Dow Chemical Co on October 19, 2004 requesting a Part 70 operating permit renewal. Additional information dated September 2, 2005 was also received.

Project

There is no project associated with this permit renewal. The emissions changes are due to updating the emissions calculations.

Proposed Permit

Part 70 operating permit 2265-V7 will be the renewal of Part 70 operating permit 2265-V6 for the Vinyl II Plant within the Dow Chemical Plaquemine facilities.

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Permitted Air Emissions

Estimated emissions in tons per year are as follows:

Pollutant	Before	After	Change
PM ₁₀	27.7	27.51	-0.19
SO ₂	3.2	3.07	-0.13
NO _x	178.7	178.51	-0.19
CO	106.1	111.91	+5.81
VOC	123.8	121.47	-2.33

LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
1,1,1-Trichloroethane	0.2	0.13	-0.07
1,1,2,2-Tetrachloroethane	-	<0.01	+ <0.01
1,1,2-Trichloroethane	0.31	0.21	-0.10
1,2- Dichloroethane	17.95	17.78	-0.17
1,2- Dichloropropane	-	<0.01	+ <0.01
1,3-Butadiene	-	<0.01	+ <0.01
1,4-Dichlorobenzene	-	<0.01	+ <0.01
2,2'-Dichlorodiethylether	-	<0.01	+ <0.01
Acetaldehyde	-	<0.01	+ <0.01
Benzene	0.02	<0.01	-0.02
Carbon tetrachloride	0.90	0.89	-0.01
Chlorine	2.1	2.05	-0.05
Chlorobenzene	-	<0.01	+ <0.01
Chloroethane	0.80	0.75	-0.05
Chloroform	1.31	1.29	-0.02
Chloroprene	-	<0.01	+ <0.01
Ethylene glycol	-	<0.01	+ <0.01
Hexachloroethane	-	<0.01	+ <0.01
Hydrochloric acid	9.3	9.29	-0.01
Methanol	-	<0.01	+ <0.01
Methyl chloride	0.04	0.01	-0.03
Naphthalene	-	<0.01	+ <0.01

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LAC 33:III Chapter 51 Toxic Air Pollutants (TAPs):

Pollutant	Before	After	Change
Styrene	-	<0.01	+ <0.01
Tetrachloroethylene	-	<0.01	+ <0.01
Trichloroethylene	0.23	0.13	-0.10
Vinyl chloride	4.55	4.91	+0.36
Vinylidene chloride	-	<0.01	+ <0.01
Total	37.71	37.44	-0.27

Other VOC (TPY): 95.37

IV REGULATORY ANALYSIS

The applicability of the appropriate regulations is straightforward and provided in the Specific Requirements section of the proposed permit. Similarly, the Monitoring, Reporting and Recordkeeping necessary to demonstrate compliance with the applicable terms, conditions and standards are also provided in the Specific Requirements section of the proposed permit.

Applicability and Exemptions of Selected Subject Items

Applicability and exemptions of selected subject items are listed as Table 1 and 2 at the Part 70 operating permit.

Prevention of Significant Deterioration/Nonattainment Review

There is no project associated with this permit renewal. Prevention of Significant Deterioration (PSD) and Nonattainment New Source Review (NNSR) are not required.

Streamlined Equipment Leak Monitoring Program

It is required that the Vinyl II Plant, Dow Chemical Company-Louisiana Division, comply with a streamlined equipment leak monitoring program. Compliance with the streamlined program shall serve to comply with each of the fugitive emission monitoring programs being streamlined.

For the Vinyl II Plant, Dow Chemical Company-Louisiana Division, fugitive emissions are subject to the requirements of 40 CFR 63 Subpart F, H, 40 CFR 61 Subpart F, V, 40 CFR 60 Subpart VV, LAC 33:III.2122, and LAC 33:III.5109. Among these regulations, 40 CFR 63 Subpart H is the overall most stringent program. Therefore, fugitive emissions shall be monitored as required by this program (40 CFR 63 Subpart H).

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Unit or Plant Site	Program Being Streamlined	Stream Applicability	Overall Most Stringent Program
Vinyl II Plant-Dow	40 CFR 63, Subpart H – HON	5% VOHAP	40 CFR 63, Subpart H – HON
	40 CFR 61, Subpart F – National Emission Standards for Vinyl Chloride	10% vinyl chloride	
	40 CFR 61, Subpart V - National Emission Standards for Equipment Leaks	10% VHAP	
	40 CFR 60, Subparts VV – NSPS for Equipment Leaks of VOC in SOCMIs or Refineries	10% VOC	
	LAC 33:III.2122 – Fugitive Emission Control for Ozone Nonattainment Areas and Specified Parish	10% VOC	
	LAC 33:III.5109 – Louisiana MACT Determination for Non-HON Sources	5% Class I and Class II TAP	

MACT Requirements

The facility is subject to Louisiana MACT requirements and 40 CFR 63 Subpart F, G, H. Detailed requirements are listed in the Specific requirements Section of the draft permit.

Air Quality Analysis

Since there is no project associated with this permit renewal, air quality analysis is not required.

General Condition XVII Activities

The facility will comply with the applicable General Condition XVII Activities emissions as required by the operating permit rule. However, General Condition XVII Activities are not subject to testing, monitoring, reporting or recordkeeping requirements. For a list of approved General Condition XVII Activities, refer to the Section VIII – General Condition XVII Activities of the proposed permit.

Insignificant Activities

All Insignificant Activities are authorized under LAC 33:III.501.B.5. For a list of approved Insignificant Activities, refer to the Section IX – Insignificant Activities of the proposed permit.

V. PERMIT SHIELD

No permit shield is requested.

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VI. PERIODIC MONITORING

See Specific Requirements Section at the proposed permit.

VII. GLOSSARY

Carbon Monoxide (CO) – A colorless, odorless gas, which is an oxide of carbon.

Maximum Achievable Control Technology (MACT) – The maximum degree of reduction in emissions of each air pollutant subject to LAC 33:III.Chapter 51 (including a prohibition on such emissions, where achievable) that the administrative authority, upon review of submitted MACT compliance plans and other relevant information and taking into consideration the cost of achieving such emission reduction, as well as any non-air-quality health and environmental impacts and energy requirements, determines is achievable through application of measures, processes, methods, systems, or techniques.

Hydrogen Sulfide (H₂S) – A colorless inflammable gas having the characteristic odor of rotten eggs, and found in many mineral springs. It is produced by the reaction of acids on metallic sulfides, and is an important chemical reagent.

New Source Review (NSR) – A preconstruction review and permitting program applicable to new or modified major stationary sources of air pollutants regulated under the Clean Air Act (CAA). NSR is required by Parts C (“Prevention of Significant Deterioration of Air Quality”) and D (“Nonattainment New Source Review”).

Nitrogen Oxides (NO_x) – Compounds whose molecules consist of nitrogen and oxygen.

Organic Compound – Any compound of carbon and another element. Examples: Methane (CH₄), Ethane (C₂H₆), Carbon Disulfide (CS₂)

Part 70 Operating Permit – Also referred to as a Title V permit, required for major sources as defined in 40 CFR 70 and LAC 33:III.507. Major sources include, but are not limited to, sources which have the potential to emit: ≥10 tons per year of any toxic air pollutant; ≥25 tons of total toxic air pollutants; and ≥100 tons per year of regulated pollutants (unless regulated solely under 112(r) of the Clean Air Act) (25 tons per year for sources in non-attainment parishes).

PM₁₀ – Particulate matter with an aerodynamic diameter less than or equal to a nominal 10 micrometers as measured by the method in Title 40, Code of Federal Regulations, Part 50, Appendix J.

Potential to Emit (PTE) – The maximum capacity of a stationary source to emit any air pollutant under its physical and operational design.

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Prevention of Significant Deterioration (PSD) – A New Source Review permitting program for major sources in geographic areas that meet the National Ambient Air Quality Standards (NAAQS) at 40 CFR Part 50. PSD requirements are designed to ensure that the air quality in attainment areas will not degrade.

Sulfur Dioxide (SO₂) – An oxide of sulfur.

Sulfuric Acid (H₂SO₄) – A highly corrosive, dense oily liquid. It is a regulated toxic air pollutant under LAC 33:III.Chapter 51.

Title V Permit – See Part 70 Operating Permit.

Volatile Organic Compound (VOC) – Any organic compound, which participates in atmospheric photochemical reactions; that is, any organic compound other than those, which the administrator of the U.S. Environmental Protection Agency designates as having negligible photochemical reactivity.